No. 15884

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

ROHR AIRCRAFT CORPORATION and THE FRANKLIN C. WOLFE COMPANY, INC.,

Appellants,

vs.

RUBBER TECK, INC., RUBBER TECK SALES AND SERVICE CO., PAUL A. KARRES, OTTO R. GRASS and JOE P. KERLEY,

Appellees.

RUBBER TECK, INC., RUBBER TECK SALES AND SERVICE CO., PAUL A. KARRES, OTTO R. GRASS and JOE P. KERLEY,

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vs.

ROHR AIRCRAFT CORPORATION and THE FRANKLIN C. WOLFE COMPANY, INC.,

Appellees.

Opening Brief of Rohr Aircraft Corporation and the Franklin C. Wolfe Company, Inc., Appellants.

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Jurisdictional Statement.

This Appeal is from a Final Judgment of the United States District Court for the Southern District of California, Central Division, dismissing Plaintiffs-Appellants' Complaint for Patent Infringement and Unfair Competition. The Defendants' counterclaim was also dismissed and Defendants have cross-appealed. The District Court had jurisdiction of the patent infringement count under 28 U. S. C. 1338(a), and of the unfair competition count under 28 U. S. C. 1338(b), and also 15 U. S. C. 1121 and 1126(h) and (i). The judgment being final, this Court has jurisdiction under 28 U. S. C. 1291.

The Complaint appears at pages 3-11 of the Record, and the Answer at pages 12-29. For clarity, the Plaintiffs-Appellants will herein be referred to by name or as Plaintiffs, and the Defendants-Cross-Appellants by their names or as Defendants.

Statement of the Case.

The patent in suit, No. 2,396,005, was issued March 5, 1946 to Plaintiff Rohr Aircraft Corporation on an application of Bernard Gross and Leo W. Cornwall filed October 2, 1944. The patent entitled Sealing Device is Exhibit 23 in the book of Exhibits [R. 855].

The invention of the subject patent relates to a device for sealing around the shank and under the head of a bolt or similar fastener. It is utilized when the fastener extends through the wall of a tank or the like to prevent fluid leakage. Particular application has been made in the aircraft industry for sealing fuel tanks and fluid-tight compartments of airplanes [R. 243].

The Disclosure of the Patent.

As is best seen in Figures 2 and 3 of the patent drawings (reproduced opposite), the preferred form of the patented sealing device comprises a rubber sealing ring 20 of round cross section surrounded by an outer metal retainer or washer 21 that is thinner than ring 20. This assembly of ring 20 and washer 21 fits around the shank and under the head of a bolt 10. When the bolt 10 is tightened in place by nut 22, the head of the bolt seats against washer 21 to secure a door plate 9, and tank wall 15 together. At the same time, sealing ring 20 is deformed from its initial round shape and conforms to the rectangular cross-sectional shape of the annular cavity defined by the shank of bolt 10, washer 21, the surface of door 9, and the head of the bolt.

Fig. 2.

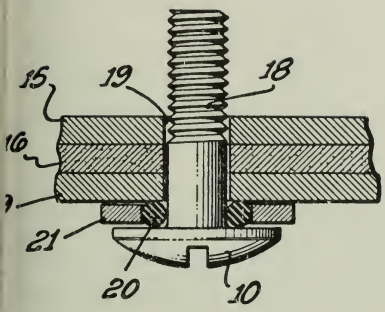
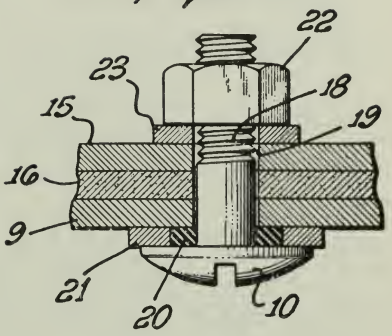


Fig. 3.



As pointed out in the specification of the patent the sealing ring 20 is doughnut shaped and so designed that it closely engages with the shank of the bolt and fits closely within the washer 21, at the same time being thicker than the washer so as to extend above and below it. Because of their substantially circular cross sectional shape, rubber rings such as the ring 20 are referred to in the trade as "O-rings." Both Plaintiffs and Defendants have used this nomenclature.

Due to the relative geometry of its parts, Plaintiffs' sealing device upon installation is centered on the bolt by the close inside and outside fits of the ring 20 and provides a channel of uniform width around the bolt. During tightening, the upper and lower protruding portions of the ring are graudally flattened and deformed within the channel without extrusion, this deformation being stopped by the engagement of the bolt head on the washer 21. The ring then conforms to the cross sectional shape of the channel where it remains confined by the washer. Since the ring resiliently resists deformation, it seeks to resume its original shape and exerts force against the surrounding surfaces thus creating a sealing pressure which prevents fluid leakage.

The Claim in Suit.

The patent contains 2 claims, of which only Claim 1 is in issue. Claim 1 reads as follows [R. 858]:

> 1. Means for sealing the walls of a tank secured between the head and shank of a fastener, comprising, in combination,
>
> a washer (21) of rigid material having a central bore, surrounding the shank of the fastener and adapted to make rigid contact with the head of the fastener and a tank wall,
>
> and a rubber-like doughnut shaped ring (20) positioned within the bore of the washer, said ring having a diameter greater than the thickness of said washer and being confined in said washer with opposite sides thereof normally protruding from the opposite faces of the washer, whereby upon the underside of the head of the fastener compressing the rubber-like ring against a portion of one contiguous wall of the tank being fastened together, said ring is deformed into sealing contact with the bore of the washer, the shank, the head of the fastener, and said contiguous portion of said wall.

The Relationship of the Parties.

In 1943 the Plaintiff Rohr Aircraft Corporation (hereinafter called Rohr) was given the task of constructing integral fuel tanks in the PB2Y3 aircraft [Finding No. 5; R. 38]. This task necessitated the development of a satisfactory fastener seal [Finding No. 6; R. 38]. Rohr, acting through Gross and Cornwall solved the problem by making the sealing device of the patent in suit.

During the balance of World War II, Rohr manufactured and installed thousands of said sealing devices on

PB2Y3 airplanes for the armed services [R. 243]. This made possible the removal of 1200 lbs. of weight and enabled these planes for the first time to fly from the West Coast to Hawaii with a useful load [R. 213].

After World War II, Rohr licensed Plaintiff Franklin C. Wolfe Company, Inc. (hereinafter called Wolfe) to manufacture and sell the patented sealing devices. They were sold under the trademark LOCK O SEAL and gained widespread acceptance in the aircraft industry [R. 68]. Between 1948 and 1957 over sixty million LOCK O SEAL were sold [R. 72]. Samples of LOCK O SEAL are physical Exhibits 81 and 87 and are identical with the devices shown in Figure 2 of the patent drawings.

Plaintiff Wolfe employed the Defendant, Rubber Teck, Inc., and its predecessors to manufacture LOCK O SEALS for Wolfe. The individual Defendants named herein were the managing directors and officers of the Defendant, Rubber Teck, Inc. By Contract the sealing devices were manufactured to conform strictly to the specifications established by Rohr, Exhibit 17 [R. 748], Exhibit 91 [R. 763].

In 1951 Plaintiff Wolfe developed a one piece version of the patented device which was first sold in June 1952 under the designation ONE PIECE LOCK O SEAL [R. 852, 900], and subsequently under the trademark STAT O SEAL [R. 853]. Samples of these devices are physical Exhibits 82 and 107. Wolfe also developed and marketed other related sealing devices under the trademarks TERMIN O SEAL, RIV O SEAL, GASK O SEAL, BOLT O SEAL, AND VALV O SEAL. These were referred to in Wolfe's advertising as the LOCK O SEAL family [physical Exs. 15 and 109].

Close working cooperation existed between both of the Plaintiffs and Defendants during the time the Defen-

dant Rubber Teck, Inc., manufactured parts for the Plaintiff Wolfe [R. 283]. Rohr established the dimensions and tolerances for the product LOCK O SEAL [R. 827]. During the years, both Rohr and Wolfe did extensive testing on materials and the finished products, revised standards and developed new manufacturing techniques [R. 234], and the results of this work were made known to the Defendants [R. 289]. In connection with this work there were frequent meetings between representatives of Rohr, Wolfe, and the individual Defendants [R. 256, 292]. This close working relationship continued until the early part of 1954 when Defendant Rubber Teck, Inc., ceased making the sealing rings of LOCK O SEALS for Plaintiff Wolfe [R. 319].

In the Fall of 1953 while continuing to manufacture parts for Plaintiff Wolfe, the Defendant Rubber Teck, Inc., introduced on the market the accused DUO SEAL device [R. 744]. The dimensions and tolerances for said DUO SEAL device as published in Exhibit 77 [R. 893] are identical with the dimensions of Plaintiffs' LOCK O SEAL device for twenty-six (26) different sizes [R. 827]. The customers for said DUO SEAL device are the same customers as for Plaintiffs' LOCK O SEAL devices [R. 898, 899]. Defendants had over a period of time made drop shipments for Plaintiffs to these customers [R. 491].

The Accused Device.

The Defendants manufacture and sell the DUO SEAL device as shown in Exhibit 9 [R. 850], and Exhibit 77 [R. 892]. Samples of the device are physical Exhibits 8, AB, and AC. It is also shown in the Defendants' enlarged drawing Exhibit Y [R. 996]. In Exhibits 9 and 77 the Defendants state that "The DUO SEAL is a one-piece

washer and O-ring combination, with the O-ring permanently bonded to the washer."

As seen in the above-mentioned exhibits the accused device comprises a rubber sealing ring surrounded by an outer metal washer that is thinner than the ring. The ring is circular on the top, bottom and inner sides and is attached on its outer side to the washer. As shown in the right hand figure of Exhibits 9 and 77 the accused device is so designed as to closely engage the shank of the bolt which it is to seal. When the bolt is tightened, the head of the bolt seats against the washer and the sealing ring is deformed from its initial shape and conforms to the rectangular cross sectional shape of the annular cavity between the bolt and washer.

The Defendant Otto Grass, the designer of the accused device testified [R. 532] that the accused device achieved the same purpose as the patented device and that he knew of no differences in the way they worked.

The trial court found in Finding No. 14 [R. 40] that the rubber sealing ring used by the Defendants is not a doughnut shaped ring and therefore there was no infringement.

The Prior Art.

No evidence whatsoever was introduced by Defendants showing the existence or use of any prior fastener seals, except the uncorroborated oral testimony of the Defendant Kerley as to an alleged use by someone, but he could not say by whom, where, or when [R. 347].

The Defendants put in evidence some thirty patents [R. 657, 659]. Two of these were introduced over the objection that they were not prior art as to the patent in

suit [R. 657]. Of the total, eleven had been cited by the Patent Office [File wrapper, physical Ex. C].

As Finding No. 17 [R. 41] states, the Defendants relied upon four of the above mentioned patents which are enumerated in said Finding. There is no finding as to which patents the Court relied on in finding want of invention in the patent in suit. Since the patents to Dowty and Johanson were admitted over objection, and the findings are not clear as to what patents the Court relied upon in reaching its decision, error has been noted as to the admission in evidence of these two patents.

Of the four patents relied upon by Defendants two, the Hart patents Nos. 67,539 and 128,391 relate to lock nuts and lock washers [R. 927, 929], the sole purpose of these devices being to keep a nut from turning off the threads of a bolt. The third patent to Seligman No. 2,191,044 is entitled Liquid Treating Apparatus of the Built-Up Type [R. 945]. It discloses a spacing member intended to separate sections of a heat exchanger. The fourth patent to Killner, British No. 537,654 [R. 956] relates to a sealing device which may be used on fasteners. This patent discloses a device having an outer retainer and an inner ring of rectangular cross section which is designed to fit loosely around the shank of a fitting so that it is deformed inwardly upon tightening of the fitting. None of the patents introduced by Defendants shows any use of an O-ring.

The Action.

In 1955 Plaintiffs Rohr and Wolfe jointly brought this action for patent infringement and unfair competition by reason of the Defendants' manufacture and sale of the accused DUO SEAL device. The Trial Court held the patent

claim in suit invalid and not infringed. The Trial Court also held that there had been no acts of unfair competition relating either to Defendants' use of proprietary information developed by the Plaintiffs nor by the use of the trade name DUO SEAL. Defendants had counterclaimed for false marking and the Trial Court dismissed said counterclaim as being without merit. All parties have appealed from the decision of the Court.

Questions Presented.

1. Should a patent on a new combination of old elements be struck down for lack of invention when the evidence is that: the combination produces new results; the closest prior art does not produce these results; the new combination is tremendously successful; and there is no prior successful solution of the problem solved?

2. Should a patient claim on a new combination of old elements be strictly limited to the exact illustrative embodiment of the invention disclosed in the patent, and thus permit avoidance of the patent by a device which has all the elements called for by the claim, and functions in the same manner to produce the same result as the patented device?

3. Is it not unfair competition for a subcontractor manufacturing a patented device to the specifications of the patent owners and intimately familiar over a period of years with all of the development, testing, and manufacturing work on the product, to market a competitive product made to the exact dimensions of the patented device, under a trade name obviously selected to fit within the Plaintiffs' family of trademarks, for sale to Plaintiffs' established customers?

Specification of Errors.

1. The Court erred in holding that Claim 1 of the patent in suit, No. 2,396,005 was not infringed by the Defendants. Finding No. 14.

2. The Court erred in holding that Claim 1 of the patent in suit is invalid. Findings Nos. 14 and 16.

3. The Court erred in holding that the Defendants have not competed unfairly with the Plaintiffs. Finding No. 20.

4. The Court erred in dismissing Plaintiffs' complaint and awarding costs to the Defendants.

5. The Court erred in finding that terms used in the patent in suit must be construed strictly against the Plaintiffs. Finding No. 13.

6. The Court erred in finding that the patent in suit is invalid for lack of invention in determining the amount of rubber to be used in the sealing ring. Findings Nos. 15 and 16.

7. The Court erred in finding that the patent in suit is invalid for lack of invention or anticipation by the patents placed in evidence by the Defendants and in not specifying how said patents were applied. Finding No. 17.

8. The Court erred in admitting into evidence the patent to Dowty, No. 2,455,982 and the patent to Johanson, No. 2,462,023 [R. 657, 658].

9. The Court erred in finding that the Defendants did not misuse or appropriate any trade secret or proprietary information of the Plaintiffs. Finding No. 20.

10. The Court erred in holding that a single instance of confusion may not establish confusion as a matter of

trademark law, and that the Defendants' use of a trademark similar to those of the Plaintiffs does not raise the possibility of confusion of the public. Findings Nos. 23 and 24.

Summary of Argument.

I.

The Trial Court's Decision of Invalidity Is Based on a Misconception of the Claimed Invention, and Upon Findings Which Are Clearly Erroneous.

Finding No. 13 [R. 40] states that washers and O-rings were old *per se*. This is conceded, but there is no evidence that O-rings were ever used in the combination claimed here. Finding No. 14 [R. 40] states that it makes no difference what shape the sealing ring in Plaintiffs' combination takes since it will be deformed anyway. This is directly contrary to the evidence. Based upon these findings one immaterial and the other erroneous, Finding No. 16 [R. 41] concludes that "There is no invention in the structure defined by Claim 1."

These findings lose sight of the fact that Plaintiffs' invention is a combination of a particular sealing ring and a particular washer which because of the interrelationship, relative geometry and size produces new and advantageous results. They also disregard the evidence as exemplified by the testimony of Gross [R. 229] that the shape of Plaintiffs' combination sealing ring and washer provides, self centering, deformation without extrusion, confined sealing pressure, and other important advantages.

Finding No. 15 [R. 41] also does not support the Court, but does show a fundamental misconception of the invention. Plaintiffs never contended that computing the amount of rubber was the invention [R. 182]. Thus, in sum and

substance, it is seen that the Court made no findings which lend any real support to the holding of invalidity of the claim in suit.

II.

The Combination of Old Elements Claimed Here Produces More Than the Sum of the Respective Functions of Its Elements and Meets the Very Test Set Forth by the Supreme Court.

The trial court held in its decision [R. 35] that the claim in suit lacks the definition of invention as pronounced by the Supreme Court. In the recent case of *Great Atlantic and Pacific Tea Company v. Supermarket Equipment Corp.,* 340 U. S. 147, 87 U. S. P. Q. 303, the Supreme Court said that unions of old elements did not amount to invention unless the elements had a change in their function by reason of the union.

The invention here fully meets this test for the washer and sealing ring together produce new and advantageous results in addition to serving their old functions. These results include self centering of the assembly on the bolt to get the proper void space on each side of the bolt, and controlling and limiting the deformation of the ring to prevent extrusion and corner pinching. Taken alone neither of the elements can produce these results, and the whole clearly exceeds the sum of its parts.

III.

The Prior Art Patents Relied Upon by the Defendants Are Different Both in Structure and Function From the Patented Invention and Are No More Pertinent Than the Ones Cited by the Examiner.

Finding No. 17 [R. 41] identifies the four prior art patents upon which the Defendants rely. Only one of these the patent to Killner [R. 956] is a fastener seal. The

others include two lock washers [R. 927, 929] and one spacer for a heat exchanger [R. 945].

The Killner patent discloses a seal having an outer rigid retainer and an inner ring of rectangular cross section which fits loosely around the shank of the fastener or fitting. This device is not self centering and the deformation of the ring is not controlled so as to prevent extrusion.

According to the statement of the Killner patent owners [found in the specification of the Dowty patent, R. 923] it happens "not infrequently" that the Killner device fails to seal because of nipping or extrusion of the sealing ring. This defect in the Killner device is caused by the shape and size of the sealing ring and retainer, the very point at which they differ from the structure of the patent in suit.

The other patents relied upon were not intended to serve as fastener seals and could not so function. Thus the prior art shows on its face that the changes made by the inventors of the patent in suit produced new and advantageous results.

IV.

The Accused Device Infringes Since It Has the Same Elements Doing the Same Thing in the Same Way as the Patented Device.

In Finding No. 14 [R. 40] the Court found that the rubber ring used by Defendants is not a doughnut shaped ring and hence there was no infringement.

The Defendants' own testimony [R. 532] is that there is no difference between the accused device and the patented device in the way they work. It is also clear from an inspection of the accused device [physical Ex. 8] and the Defendants' drawings of it Exhibit Y [R. 996], that the ring therein is circular on its top, bottom, and inner side.

Applying the rule of the leading case of *Winans v. Denmead,* 15 How. 330 to this situation, it is clear that the accused device does infringe for it has the same elements attaining the same result, by the same mode of operation, as the patented device.

V.

The Last Step Which Turns Failure Into Success Is Invention, for It Is the Essence of the Contribution, Which the Patent Laws Are Designed to Reward.

This case presents a classical example of the kind of an invention which solves a long existing problem. The steps which the invention took could have been taken by any of the other workers in the tank art, but they were not. The invention has been used successfully in millions of installations [R. 68] and is still being used today 13 years after its inception.

The invention is supported not only by the test set forth in Title 35 U. S. C., Section 103, but by the law stated by this Court in *Pointer v. Six Wheel Corporation,* 177 F. 2d 153. The new function resulting from the combination of elements here did not appear obvious to other workers skilled in the art. This is invention.

VI.

The Defendants Did Not Independently Design the DUO SEAL Device but Instead Worked From the Established Specifications of the Plaintiffs. They Used the Proprietary Information of Plaintiffs Which They Had Learned Not as Strangers but as Subcontractors Working Under Implied Trust and Confidence.

The Defendants acted for many years as subcontractors for the Plaintiffs in manufacturing the patented invention. When they came on the market with the accused device they followed the dimensions of the patented device exactly

for every one of the dimensions of twenty-six different sizes [see Ex. 1, R. 827; Ex. 77, 893].

During the years the Plaintiffs had done extensive development, testing and engineering on the patented devices, and the results of this work were transmitted to the Defendants.

Having accepted the benefits of manufacturing for the Plaintiffs, the Defendants came under a duty not to use information imparted to them so as to injure the Plaintiffs in their business. The breech of this duty was unfair competition.

VII.

The Defendants' Choice of a Trademark.

The Plaintiffs had adopted a related family of trademarks for their products long prior to the Defendants' entrance into the field. The trademarks are LOCK O SEAL, STAT O SEAL, RIV O SEAL, TERMIN O SEAL, BOLT O SEAL, VALV O SEAL and GASK O SEAL [R. 962-968].

Defendants when they selected a trademark allegedly conducted a "survey" and decided upon DUO SEAL [R. 505]. Since the Defendants' product is sold to the same customers as Plaintiffs' patented LOCK O SEALS and STAT O SEALS, for identical usage, it is obvious that the only way they can be kept straight is by their names. Under these circumstances it is submitted that Defendants' trademark is "likely" to cause confusion in the trade (15 U. S. C. 1114).

ARGUMENT.

I.

The Trial Court's Decision of Invalidity Is Based on a Misconception of the Claimed Invention, and Upon Findings Which Are Clearly Erroneous.

A careful study of the findings and opinion below shows that the trial court was laboring under a misconception of the essential facts and was therefore led into error in its decision.

Finding No. 13 [R. 40] states that washers and O-rings were old *per se*. This is conceded. It is not conceded however, and there is not a shred of evidence in the case to show, that O-rings were ever used to seal fasteners or were used in a sealing operation similar to the one involved in this case. Finding No. 14 states that it makes no difference what shape the sealing ring in Plaintiffs' combination takes, since all rubber rings will be deformed irrespective of shape. This is directly contrary to the evidence. Based upon these findings, one immaterial and the other erroneous, Finding No. 16 [R. 41] then concludes that "There is no invention in the structure defined by Claim 1."

This line of reasoning completely loses sight of the fact that Plaintiffs' invention is a combination of a particular kind of rubber ring, *i.e.,* doughnut shaped or substantially circular in cross section, mounted in a metal washer of particular shape *i.e.,* of lesser thickness than the ring and that the assembly is mounted on a fastener shank in close engagement therewith. It further ignores the fact that by this arrangement and due to the relative geometry and interrelationship of its parts, Plaintiffs' sealing device is self centering on the bolt and provides a

channel of uniform width around the bolt into which the upper and lower protruding portions of the ring are gradually flattened and deformed without extrusion, this deformation being stopped by the engagement of the bolt head on the washer 21.

That this combination is new and provides more than would be expected is clear from the testimony of Bernard Gross, a highly qualified expert and for 15 years Director of Research for Rohr. Commencing at R. 229 we find the following:

> "Now, when the LOCK O SEAL is installed, we actually have an upset of rubber in all directions, and it is important to remember that there are fundamentally four sides involved, and that when the torque is applied to the fastener, the geometry changes, so that starting with what amounts to a point of contact, we increase that contact until we have all four sides practically mated with rubber.
>
> When this happens, we have pressure. We have resilient pressure, or we have rubber pressure, rubber pressure on all four sides, and we therefore can depend on the memory of the rubber to continue to seal the fastener.
>
> In addition, when this bolt is tightened onto the retainer ring, we have a metal-to-metal contact. There are several things that are involved at this point.
>
> One is that the volume, the geometrical change of the rubber, has been made in such a manner that we are restricting pressure over the elastic properties or some of the elastic properties of the rubber. * * * so that this confined area actually controls the pressure on the rubber, and it remains in its—it can be made to return to its initial geometry.

In addition, when this geometry takes place, it does so in such a manner that the corners are the last ones to fill up. In that manner we prevent any possibility of pinching of the rubber in the various faying surfaces. * * *

Q. Did you discuss the matter of self-centering? A. No. In the installation requirements, the self-centering of a seal is important so that when we put the seal on to the shank, it is desirable to have this point on top the shank. If that were not so and we had a space between the rubber seal and the shank, we would have a chance for leakage under some conditions on one side, and we wouldn't have the proper geometry flow as another thing. The centering is very important, and the Lock-O-Seal does self-center when you install it.

The Court: In your opinion, a round rubber seal is the only one that works satisfactorily?

The Witness: If it is substantially round.

The Court: Substantially round?

The Witness: Yes.

The Court: You don't think a rectangular seal would be satisfactory, providing it extended to the top and bottom there, but didn't touch the sides? You don't think it could be compressed into proper form?

The Witness: That is correct. It would not be satisfactory for several reasons. One is that we would start off with a rectangular geometry, which either had to be exactly the same volume as we have in the void after installation, in which there would be no rubber pressure on the four sides, so to speak, because we don't have a geometry change, or if you had it in excess, you would have the rubber flowing out into the—

The Court: Suppose there was an excess up and down and then you put on the pressure.

The Witness: You mean that way (indicating)?

The Court: Up and down so that part of it hit the top on both sides.

The Witness: This rubber would not have the distribution of pressure that you have with his geometry. Furthermore, this corner would always be pinched in there, and you couldn't hold a torque on the fastener head.

The Court: Then it is your opinion that the only satisfactory O-ring would be a round O-ring, circular, substantially circular?

The Witness: Substantially circular, yes."

In view of the above testimony it is clear that Finding No. 14 as to the function and relationship of Plaintiffs' sealing ring and Finding No. 16 as to lack of invention in Plaintiffs' combination are clearly erroneous.

In Finding No. 15 [R. 41] the trial court found that the amount of rubber to be used in the patented sealing ring could be determined either mathematically or by trial and error. This is freely admitted. Then in Finding No. 16 [R. 41] the Court stated that there is "no invention" in determining the amount of rubber to be used in the sealing ring.

These findings in no way support the judgment since Plaintiffs never contended that computing the amount of rubber was the invention. This is clearly brought out by the following testimony of Plaintiffs' witness, Robert Comstock [R. 181-182]:

"The Court: It's very important, isn't it, to have the rubber washer of the right size as well as shape?

The Witness: That's right.

The Court: You say it is necessary to have a round shape, but it is very important to have a necessary quantity of rubber.

The Witness: That is correct, your Honor.

The Court: That is, if you have too much it extrudes, and if you don't have enough, it doesn't fill up the cavity.

The Witness: That's right.

The Court: To determine the exact amount of rubber necessary in the washer, is that invention?

The Witness: Yes, your Honor, because this type of relationship had never been used before.

The Court: I am not talking about the relationship at all. I am talking about whether or not to determine the volume of rubber is invention.

The Witness: To determine the volume of rubber as used in this structure, because the whole concept is novel. In other words, given the Gross patent and then to determine the volume from there on, no. In other words, once you are handed the invention and you are going to put it into practice, that is very simple to do. But without the Gross patent in front of you, it is not simple."

Given the invention, it obviously merely becomes a matter of mathematical calculation or trial and error to determine the size of the parts to put it into practice. It is manifest therefore that the above Findings fail to show a lack of invention and therefore do not support the Court's decision of invalidity.

II.

The Combination of Old Elements Claimed Here Produces More Than the Sum of the Respective Functions of Its Elements and Meets the Very Test Set Forth by the Supreme Court.

As pointed out earlier the patent in suit discloses the combination of a rubber ring of substantially round cross section, an O-ring in the preferred form, with an outer rigid washer which is thinner than the diameter of the O-ring. The assembly is closely fitted around the shank and under the head of the fastener outwardly of the tank wall as is seen in Figure 2 of the patent drawings [R. 855]. When the fastener is tightened as shown in Figure 3 of the drawings, the protruding portions of the O-ring are deformed by the fastener head and tank wall to just fill the channel between the washer and the fastener shank.

Each element is in itself old in the art. Washers have been used for years under the heads of fasteners to increase the bearing surface, and O-rings were long known and used in other types of sealing.

Viewed with the careful scrutiny imposed by the Supreme Court in the case of *Great Atlantic and Pacific Tea Company v. Supermarket Equipment Corp.* 340 U.S. 147, 87 USPQ 303-306, this new combination of old elements claimed in the patent in suit produces something more than the sum of its parts. As the Court there said, the test of invention in a union of old elements is determined by their ultimate function (p. 152):

> "A patent for a combination which only unites old elements *with no change in their respective functions,* such as is presented here, obviously withdraws what already is known into the field of its monopoly and diminishes the resources available to skillful men." (Emphasis added.)

It is, of course, true in the present case that the washer serves its respective function as a bearing member, and the O-ring serves its respective function as a seal, but together they produce new and additional results. Because of the relative geometry and interrelationship and size of the washer and O-ring: (1) The ring serves to center the assembly on the shank of the bolt thus providing an annular channel of uniform width into which the ring may be deformed. (2) The ring is deformed gradually from a round to a rectangular shape and the washer limits this deformation to prevent extrusion. These are new and additional results not arising from the old functions of either of the elements. It is the exact kind of a change called for by the Supreme Court.

How is the first new result accomplished? Since the O-ring fits closely around the shank of the bolt and inside of the washer it spaces the washer concentric with the axis of the bolt and thus provides an annular channel of uniform width between the washer and bolt shank. Because this channel defines the space into which the ring must be deformed it is important that it be of uniform width and of the exact size to receive the ring therein. If it is not, there may be excessive space for the rubber on one side of the bolt shank and not enough on the other. Extrusion of the rubber and leakage of fluid would then occur.

How is the second new result accomplished? In brief, by presenting to the faces of the relatively movable members (fastener head and tank wall) convex deformable portions projecting above and below the washer and shaped to make initial tangential contact which are gradually rolled outwardly to a flattened shape. The initial situation is shown in Figure 1 of the illustrative drawings presented on the opposite page. As the operation proceeds, see Figure 2, the projecting portions resist a change

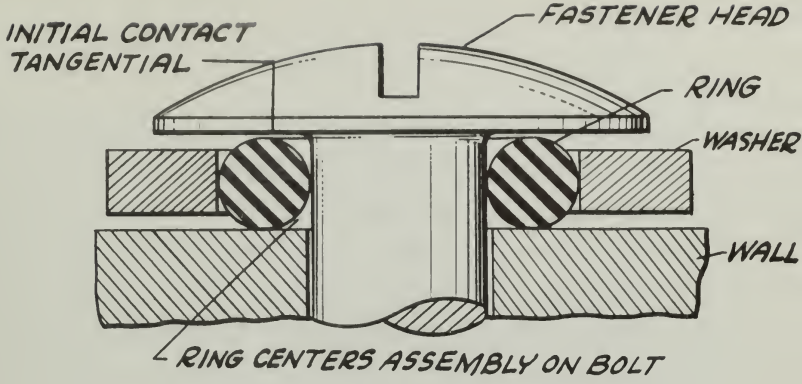


FIG. 1.

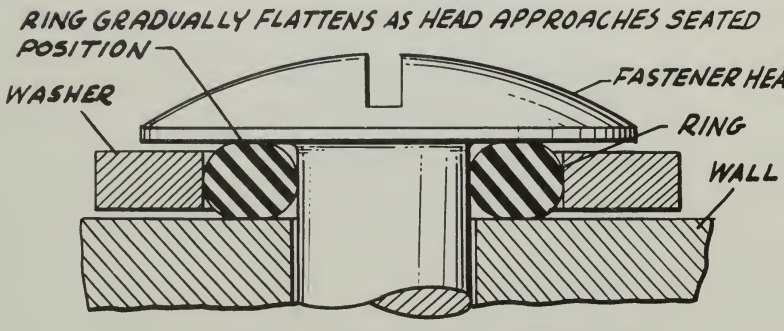


FIG. 2.

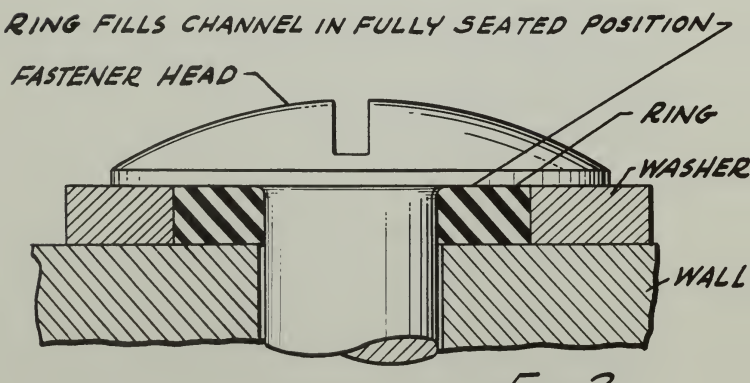


FIG. 3.

PATENT IN SUIT NO. 2,396,005

of shape and try to remain circular but are gradually flattened outwardly. The material of the ring flows toward the corners of the void channel but resists going into these corners since the ring is trying to stay circular. At the end (Figure 3) the ring has completely filled the void channel and exerts full sealing contact. Since the restoring force or internal resilience of the rubber is proportional to the amount of deformation which has occurred, the round crowns of the ring which have been deformed exerts a strong outwardly directed force to create sealing contact.

Thus it is seen that the invention of the patent in suit meets the tests of invention laid down in the *A. & P.* case since the function of the combination and its component parts are different from and in excess of the functions of these parts in their prior usage.

III.

The Prior Art Patents Relied Upon by the Defendants Are Different Both in Structure and Function From the Patented Invention and Are No More Pertinent Than the Ones Cited by the Examiner.

Finding No. 17 [R. 41] identifies the four prior art patents upon which the Defendants rely. Each and every one of these patents is different from the patented device. None even shows the use of an O-ring, and only one relates to fastener sealing.

The two Hart patents, No. 67,539 issued to D. B. Hart and No. 128,391 issued to G. Hart [R. 927, 929], are both directed to lock washers. Their main and sole purpose is to prevent loosening of the nuts upon the threads of the bolt. There is not the slightest concern with sealing problems, nor any suggestion or teaching that the

Hart devices would seal if made in accordance with the patent disclosures. The Defendants did not introduce any evidence to show any of these devices were ever made, much less any evidence to show that they would seal.

The Hart '539 patent discloses in Figure 5, a metal and rubber lock washer in which the rubber portion is pentagonal in cross-sectional shape. In Figure 8 it is rectangular in shape. In both cases the rubber is much thicker than the metal washer and could not be confined entirely within the metal washer. Thus the metal washer could not be tightened firmly between the head of a fastener and a tank wall for there would simply be no place for the excess rubber to go. In other words, the Hart '539 device might, as it is intended to do, function as a lock washer but it would not make a fastener seal because there is no way to limit the deformation of the rubber portion and prevent extrusion. In view of the fact that the Hart '539 device is not intended to seal, and provides a lock washer of different shape and relationship than the patented device, it cannot be anticipatory of the invention in suit.

What is said about the Hart '539 patent applies with even more force to the Hart '391 patent. Again, the Hart '391 patent is concerned solely with a lock washer. In this case the structure disclosed is a metal and rubber washer in which the rubber part appears to be generally trapezoidal in shape with an upwardly convexed portion. The amount of rubber in the Hart '391 device clearly exceeds the space within the metal washer in which it is fitted so that its outer metal retaining washer could not be tightened in metal-to-metal bearing engagement between the head of a fastener and the tank wall as in the patented device.

The Seligman patent No. 2,191,044 [R. 945] is again something entirely different than the patented invention. In Seligman, we are presented with a device which is not a fastener seal but merely a resilient spacer for a built up heat exchanger. The Seligman device is, as shown, a large rectangular framework open internally and is manifestly not intended to surround anything, let alone make contact with the shank of a fastener. The resilient spacing member in Seligman is enclosed by a metal framework to prevent it from spreading outwardly as in the Hart devices previously discussed, but again as in Hart, we have a larger amount of rubber than can be confined within the metal frame. In other words, Seligman intended that the plates which are separated by the spacer would not rest on the metal frame but on the spacer alone as is clearly seen in Figures 8, 9 and 10 of the Seligman drawings. Again, the Seligman patent has a different structure and a different function from the patented device—it does not anticipate.

The Killner patent British No. 537,654 [R. 956] is the one upon which the Defendants must principally rely. This patent discloses a sealing device in which a rubber ring of rectangular cross section is confined by an outer metal band. In order to compress the rubber within the metal band it is necessary to space the rubber ring away from the member on which it is fitted, in a relationship such as is clearly shown in Figure 3 of the Killner drawings. This means that the washer and sealing ring cannot be self centering upon the shank of the bolt. Accordingly, the channel between the washer and bolt shank will not be of uniform width resulting in too much space for the rubber on one side of the bolt and not enough on the other. The effect of tightening the fastener under

these conditions is illustrated in the drawings shown opposite. In the initial condition shown in Figure 1, it is easily seen that there is no reason why the washer and sealing ring should center upon the shank of the fitting. In fact, there is every reason why they should not, since the assembly will normally tend to ride to one side until the sealing ring bumps into the shank of the bolt in the condition as is illustrated in Figure 2. It is then apparent that there is too much space for the rubber on one side of the bolt and not enough on the other. Tightening of the bolt as is shown in Figure 3, can only result in the corners of the sealing ring being extruded outwardly over the confining band, preventing tight metal-to-metal contact and destroying the seal. That this exact thing does happen is a matter of record before this court as admitted by the owners of the Killner patent.

In the Dowty patent No. 2,455,982 [R. 923] we find in the specification the following sworn statement:

> "It has been found that the *Killner sealing washer,* of common ownership with the present invention, *is subject to certain definite, but scarcely predictable, disadvantages.* * * * it happens not infrequently that the sealing ring, first engaged by the abutment flanges because this sealing ring projects abruptly axially beyond and about a circle immediately adjacent the confining ring, is caused to spread outwardly to overlie the end of the confining ring. As the abutment flanges continue to approach the confining ring, this outwardly spread, overlying lip of the sealing ring is nipped between the abutment flange and the confining ring, and may be severed from the sealing ring. *This nipping may not be uniform about the entire circle, and its effect is to weaken the seal, provide weak spots where leakage may start, and*

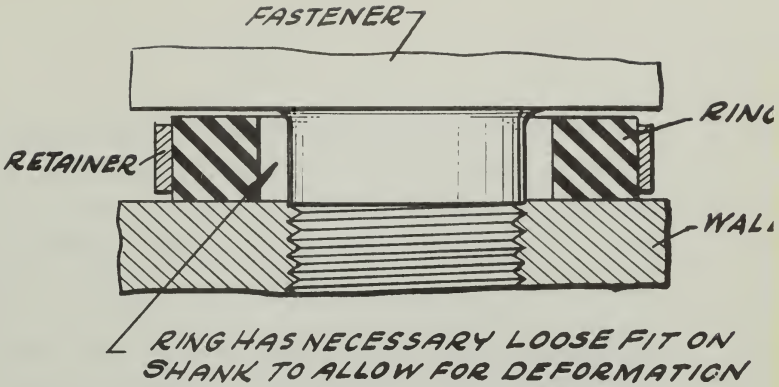


FIG. 1

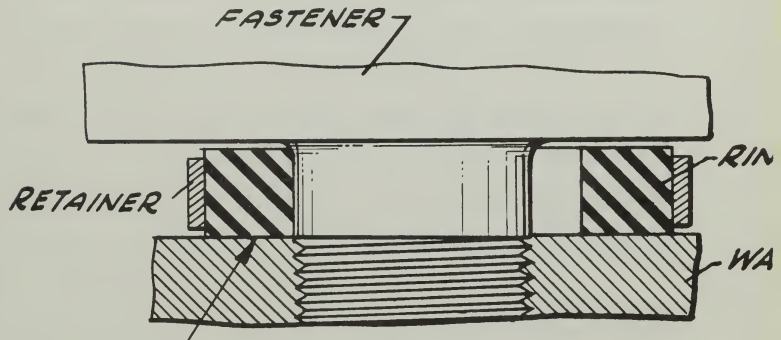


FIG. 2

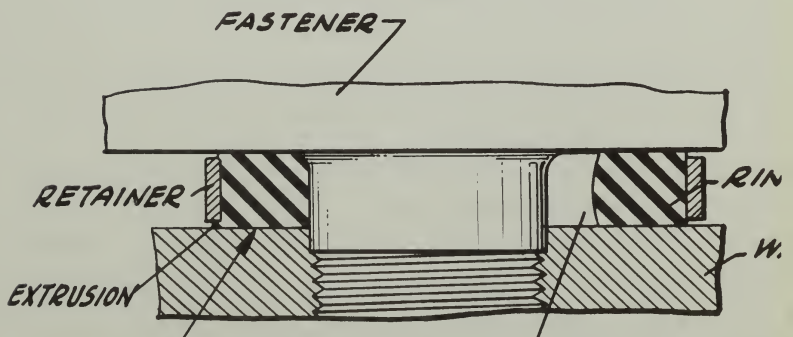


FIG. 3

KILLNER PATENT NO. 537,654

space the abutment flange from actual contact with the confining ring, and from one or more of these causes to invite leakage. Moreover, the effectiveness of the sealing washer for reuse is destroyed by such nipping." (Emphasis added.)

Thus, according to the owners of the Killner patent it is subject to extrusion and pinching of the rubber between the metal parts, the seal is weakened, and leakage occurs. In other words, the Killner owners confirm the very facts which Plaintiffs have been urging throughout this case. The distinction between Killner with his rectangular ring and the device of the patent in suit with its doughnut shaped or substantially round ring, is therefore simply the difference between failure on the one hand, and complete success on the other. This we submit is particularly cogent evidence of invention.

The Defendants here choose to rely upon four prior art patents which were not cited by the Patent Office in the prosecution of the patent in suit. Thus, as Defendants always do, they seek to weaken the presumption of validity. In this case the patents cited by the Patent Examiner are just as pertinent as the patents relied on by the Defendants.

The patents to Welch No. 2,159,346 and to Moser No. 1,208,620 were both fully considered by the Examiner in charge of the prosecution of the patent in suit [see file wrapper physical Ex. C]. Both of these reference patents found in physical Exhibit A teach the combination of an outer rigid retainer and an inner deformable ring. The reference to Killner upon which the Defendants rely so heavily teaches a deformable inner ring of rectangular cross section which ring is longer than the axial opening through the retainer. The reference patent to Welch

teaches exactly such a deformable rectangular ring 10 which is longer than the axial opening through the retainer 6 as shown in Figure 1 of the Welch patent drawings. In fact, each and every statement which the Defendants can make about Killner can be made equally well about Welch. Insofar as lock washers are concerned, the reference patent to Moser is just as pertinent to the subject invention as are the lock washers of the Hart patents relied upon by the Defendants.

Title 35, U. S. C., Section 282, first paragraph provides:

> "A patent shall be presumed valid. *The burden of establishing invalidity of the patent shall rest on a party asserting it.*" (Emphasis added.)

This burden is not overcome merely by citing other patents than those made of record by the Patent Office without showing that they are sufficiently more pertinent to created a presumption that they were overlooked by the Examiner. This the Defendants have not done.

As stated by this Court in *Park-In Theatres, Inc. v. Rogers, et al.,* 130 F. 2d 745, 55 U. S. P. Q. 103, 105:

> "The issuance of the patent is presumptive evidence of invention and patentability. The presumption is so strong that in the event of a reasonable doubt as to patentability or invention, that doubt must be resolved in favor of the validity of the patent. (*Mumm v. Decker,* 301 U. S. 168, 171. See, also, *Frank v. Western Electric Co.,* 24 F. 2d 642, 645.)"

In the recent case of *Ry-Lock Company, Ltd. v. Sears Roebuck & Company* (1955), 227 F. 2d 615, 107 U. S. P. Q. 292, this Court distinctly pointed out that the presumption of validity of a patent is reinforced by the existing statute (35 U. S. C., Sec. 282) and further cau-

tioned trial courts that a general finding of want of invention and of anticipation such as presented there is inherently defective.

Here, as in the *Ry-Lock* case, the trial court merely made a general finding [No. 16, R. 40] of want of invention and then in Finding No. 17 [R. 40, 41] listed the four patents *relied upon by Defendants*. There is no finding however as to how, if at all, these patents, taken singly or collectively, apply to the patent in suit or in any way showed lack of invention.

IV.

The Accused Device Infringes Since It Has the Same Element Doing the Same Thing in the Same Way as the Patented Device.

The trial court found in Finding No. 13 [R. 40] that "Plaintiffs used the term 'a rubber-like doughnut shaped ring' in the patent and this term must be strictly construed as against them." In Finding No. 14 [R. 40] the Court found that "the rubber ring used by Defendants is not a doughnut shaped ring."

Upon inspection of the accused device [physical Ex. 8] and drawings in Defendants' advertising [Ex. 77; R. 892] the Court will appreciate that the ruber ring therein is a ring which is circular on the top, bottom and inner side. It protrudes above and below the outer washer in the same manner as the patented device and presents the same surfaces for deformation. An enlarged view of the shape of Defendants' ring is seen in the drawing Exhibit Y [R. 996] prepared by the Defendants.

Since the Defendants were subcontracting the manufacture of the patented device for the Plaintiffs they were

well aware of the invention of the patent in suit. They were also aware of Plaintiff Wolfe's introduction of the one-piece LOCK O SEAL, later called STAT O SEAL, more than a year prior to the introduction of the accused DUO SEAL device [R. 901]. To make such a seal it is necessary to provide on the outer edge of the ring a flat flange for attaching the ring to the retainer. Plaintiff did it and so did the Defendants. It offered the obvious advantage of preventing separation of the parts, an advantage which Gross and Cornwall, the inventors had considered years before [R. 866].

No one has any difficulty in deciding that a round ring or O-ring is a doughnut shaped ring. Such a ring is illustrated in the patent in suit. Must this ring be exactly circular to be a doughnut shaped ring? Does any deviation from a circular ring render it something other than a doughnut shaped ring?

Certainly this was not what the patentees intended for as they state at the end of the specification [R. 857]:

> "Our invention may be embodied in other forms or carried out in other ways without departing from the spirit or essential characteristics thereof. The present embodiment of our invention as hereinbefore set forth is therefore to be considered in all respects as illustrative and not restrictive, the scope of our invention being indicated by the appended claims, and all changes which come within the meaning and range of equivalency of the claims are intended to be embraced therein."

The facts in this case are believed to be on all fours with the leading case of *Winans v. Denmead,* 15 How. 330, 14 L. Ed. 717, which involved the question of infringement of a claim on a *round* railroad car tank by an accused device of octagonal shape. The Court stated in its conclusion (at 343):

> "* * * And, therefore, the patentee, having described his invention, and shown its principles, and claimed it in that form which most perfectly embodies it, is, in contemplation of law, deemed to claim every form in which his invention may be copied, unless he manifests an intention to disclaim some of those forms.
>
> "Indeed it is difficult to perceive how any other rule could be applied, practicably, to cases like this. How is a question of infringement of this patent to be tried? It may safely be assumed, that neither the patentee nor any other constructor has made, or will make, a car *exactly* circular. In practice, *deviations from a true circle will always occur.* How near to a circle, then, must a car be, in order to infringe? May it be slightly elliptical, or otherwise depart from a true circle, and, if so, how far?
>
> "In our judgment, the only answer that can be given to these questions is, that it must be so near to a true circle as substantially to embody the patentee's mode of operation, and thereby attain the same kind of result as was reached by his invention. *It is not necessary that the defendant's cars should employ the plaintiff's invention to as good advantage as he employed it, or that the result should be precisely the same in degree.* It must be the same in kind, and effected by the employment of his mode of operation in substance. * * *" (Emphasis added.)

The *Denmead* case was cited with approval in the recent case of *Graver Tank & Mfg. Co., Inc. v. Linde Air Products Co.,* 339 U. S. 605, 607, 70 S. Ct. 854, 855. The Supreme Court there said:

> "The doctrine of equivalents evolved in response to this experience. The essence of the doctrine is that one may not practice a fraud on a patent. Originating almost a century ago in the case of *Winans v. Denmead,* 15 How. 330, 14 L. Ed. 717, it has been consistently applied by this Court and the lower federal courts and continues today ready and available for utilization when the proper circumstances for its application arise."

Had the Defendants in this case shown that their device was different in function or operation or result from the patented device—then they might well have argued that a difference in form would constitute a non-use of the patented invention. No such evidence was or could be produced. On the contrary the Defendants' evidence shows complete equivalence between the two devices.

Typical of the evidence before the Court on this point is the testimony of the Defendant Otto Grass who was the designer of the accused device. We quote the testimony of Grass at page 532 of the Record:

> "The Court: What is the difference between the two seals?
>
> The Witness: Are you asking me?
>
> The Court: Yes, I am asking you. I don't care anything about referring to that exhibit, but what is the difference between the two seals.
>
> The Witness: One is bonded, has a flat portion on the washer side. The other has an O-ring in a washer.

The Court: That is the only difference?

The Witness: That is the only difference that I can see.

* * * * * * * *

Q. (By Mr. Lee): You don't know of any differences in the way they work? A. Not the way they work. There is a difference in the way they are constructed."

In view of such evidence, the trial court's conclusion that the term "doughnut-shaped ring" must be construed strictly against the Plaintiffs, and that the Defendants' ring was not "doughnut-shaped" is clearly erroneous both as a matter of fact, and of controlling law. The decision of non-infringement should therefore be reversed.

V.

The Last Step Which Turns Failure Into Success Is Invention, for It Is the Essence of the Contribution, Which the Patent Laws Are Designed to Reward.

This case presents a classical example of the kind of an invention which solves a long existing problem. The need for a fastener seal to prevent fluid leakage through the opening around bolts, rivets, and the like, was long known. Such a seal was particularly needed in the aircraft industry where countless numbers of fasteners are passed through the skin and structural members of the ship. In one large aircraft discussed at the trial (Navy PB2Y-3) approximately 800 of such sealed fasteners are used [R. 243]. The problem was highlighted in 1943 when during the crisis of World War II the Plaintiff, Rohr Aircraft Corporation, was given the urgent task of constructing integral fuel tanks in the PB2Y-3 aircraft [R. 210].

In the tank art, workers had long sought a satisfying solution. The patent to Buchanan cited by the Patent Office in the prosecution of the patent in suit [see physical Ex. A] was filed in 1922. The exact same problem of sealing a fastener passed through the wall of a tank was presented then as it was presented to Gross and Cornwall in 1943.

Upon investigation Gross found that other aircraft manufacturers were in fact attempting to seal fasteners. Two methods of sealing fasteners were found in use. One of these was the so-called "sandwich seal," the other was caulking compound [R. 416]. In the "sandwich seal" a layer of rubber was placed between the skin plates through which the fastener passed. As the fastener was tightened the rubber was put under pressure and sealed around the shank of the fastener [R. 97]. Since the rubber was not confined it tended to loosen in time and permit leakage [R. 97]. The caulking compound was equally ineffective, it might or might not seal [R. 98]. Evidence of the practices of the industry was not only given by Gross but fully corroborated by the testimony of McClay a Navy engineer [R. 96].

Since an airplane is a highly stressed structure it is made light enough to fly only by utilizing the maximum strength of the component parts. Each fastener in the plane carries load and to distribute that load evenly the fasteners must be torqued or tightened to equal values. During service the fasteners must remain tight. The seal for such fasteners must therefore not weaken the fasteners or permit them to work loose.

In order for the fastener to carry its assigned share of the stress, the ends of the fastener must have rigid

metal-to-metal support on the skin plates. If rubber is interposed between the bearing surfaces the stress or load carrying ability of the fastener is lost. The structure can weave and shift and the fastener will become loose under vibration [R. 228]. It is therefore essential that the deformable sealing material not form the bearing support, and that it not be allowed to extrude between surfaces which are designed to make metal-to-metal contact.

Gross and Cornwall also realized that an effective fastener seal had to be one which did not require custom hand work necessitating highly skilled and time consuming operations on the assembly lines. Thousands of ordinary aircraft mechanics had to be able to install the fastener seals without extensive supervision and the results had to be uniformly good. This factor alone was a severe stumbling block to workers in the art.

Of major importance was the fact that whatever seal was devised it had to do a good job of preventing fluid leakage. What makes a good seal? Rubber which is deformed from its initial shape has a strong urge or memory factor tending to return it to its original shape. Within its elastic limits, the more pronounced the change of shape the more positive is the sealing contact.

However, it is not enough to simply provide deformation of rubber. The deformation must be limited to prevent extrusion [R. 230]. Controlling the deformation of the rubber around the head of the fastener cannot be accomplished if there is more space on one side of the fastener for rubber than the other [R. 231]. It is necessary to seal all around the fastener to prevent leakage, and extrusion or pinching of the rubber at any one point immediately permits such leakage [R. 230].

This was the nature of the problem that confronted Gross and Cornwall in 1943. The invention which Gross and Cornwall then made was in every respect a solution to the problem at hand. The device which embodies this invention is physically simple, consisting of two elements, an outer rigid metallic washer and an inner doughnut-shaped ring of rubber.

As previously explained, the relative geometry, size and interrelationship of the washer and sealing ring causes the sealing ring to center the assembly on the shank of the fastener and thus define a channel of uniform width between the washer and bolt shank into which the sealing ring may be deformed. Thus there is uniform space around the bolt and not too much on one side and too little on the other. Of equal importance is the relationship between the amount of rubber in the ring and the volume of the channel between the washer and the fastener shank. There must be, and is, just enough rubber to fill this space. Too much, and the rubber will extrude outwardly above and below the washer. Too little, and there may not be good sealing contact.

We therefore do not have a situation of any washer and any ring. There is a critical cooperative relationship between the two. Absent this relationship the primary consideration of good sealing is not achieved. This relationship is found in the Defendants' DUO SEAL device which, of course, is intended to be sold to the same customers, for the same use, and to work in exactly the same manner as the patented devices sold by the Plaintiffs as LOCK O SEALS and STAT O SEALS.

Plaintiffs do not claim a monopoly on the combination of any washer and any sealing ring. What they do claim is the combination of a particular retaining washer with

a particular rubber ring to provide new cooperative results. It seems that the Defendants must practice this same concept taught by the patent in suit. They are not satisfied with the rectangular, triangular or pentagonal rings shown in the prior art patents.

When all is said and done there is no exact formula for testing invention. What the Court must do is to review the record, the history of what came before, the steps taken by the patentee, and the results—was there a real, tangible, contribution to the art. We submit that the record of this case points out clearly that such a contribution to the art was made.

The prior art as best exemplified by the British patent to Killner disclosed the idea of a fastener sealing device having a metal washer and a rubber sealing ring. There was only one trouble with this idea—it didn't work—according to the clear-cut statement of the people who should know best, the owners of the Killner patent who tested and tried to use it.

Gross and McClay testified that the methods of sealing fasteners in use in the major aircraft companies in 1943 were unsatisfactory. Here we have large aircraft companies and their scores of engineers who did not see the answer—else they would not have been building vital airplanes with fasteners that were not properly sealed.

The test of invention set forth in Title 35 U. S. C. Section 103 is that a patent may not be obtained

> ". . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole *would have been obvious, at the time the invention was made, to a person having ordinary skill in the art to which said subject matter pertains.*" (Emphasis added.)

What kept Killner and the other workers in this field from taking the step that Gross and Cornwall took to overcome the defects of the prior art? The answer is that it was not an obvious step.

Viewed after the invention the results obtained are most impressive. The Plaintiffs' patented LOCK O SEALS and STAT O SEALS are in use by practically every major aircraft company [R. 68] and have practically superseded all other forms of fastener sealing. The patented devices have had tremendous commercial success. Over sixty million of these devices have been sold [R. 72] to intelligent aircraft designers who buy products on their merits. This is commercial success of the highest order.

The law of this Circuit on invention is well expressed in the case of *Pointer v. Six Wheel Corporation,* 177 F. 2d 153, 83 U. S. P. Q. 43 a case frequently cited in recent cases such as,

Winslow Engineering Co. v. Smith, 233 F. 2d 438, 106 U. S. P. Q. 209;

Sterns v. Tinker & Rasor, 220 F. 2d 49, 104 U. S. P. Q. 234.

In the *Pointer* case, the Court said:

> "A test which has been found very useful and generally followed is that adverted to by Mr. Chief Justice Taft in the case just referred to,—namely, the discovery of the source of the difficulty and the application of a remedy not thought of before. * * *
>
> "By the same token, invention cannot be defeated merely by showing that, in one form or another, each element was known or used before. [citing cases]

"The question is: Did anyone before think of combining them in this manner in order to achieve the particular unitary result,—a new function? *If not there is invention.*" (Emphasis added.)

The attention of the Court is particularly directed to the case of *Diamond Rubber Co. v. Consolidated Tire Co.*, 220 U. S. 428, which involved a patent on a solid rubber tire for a wheel.

Commencing on page 434 of the decision we find the following:

"The tire has utility, a utility that has secured an almost universal acceptance. * * * It attained an end not attained by anything in the prior art, and has been accepted as the termination of the struggle for a completely successful tire. * * * Its simplicity should not blind us as to its character. Many things and the patent law abounds in illustrations, seem obvious after they have been done,"

". . . the prior art was open to the Rubber Company. That 'art was crowded,' it says, 'with numerous prototypes and predecessors' of the Grant tire, and they, it is insisted, possessed all of the qualities which the dreams of experts attributed to the Grant tire. And yet the Rubber Company uses the Grant tire. It gives the tribute of its praise to the prior art; it gives the Grant tire the tribute of its imitation."

Here, as in the *Diamond Rubber* case the Defendants give the tribute of their *praise* to the prior art—but give to the patent in suit *the tribute of imitation.*

VI.

The Defendants Did Not Independently Design the Duo Seal Device but Instead Worked From the Established Specifications of the Plaintiffs. They Used the Proprietary Information of Plaintiffs Which They Had Learned Not as Strangers but as Subcontractors Working Under Implied Trust and Confidence.

The record is clear that in manufacturing the patented devices for plaintiffs, the Defendants as subcontractors were bound by contract to operate under the specifications and standards established by the Plaintiff Rohr as supplemented by the Plaintiff Wolfe. This is established by the terms of the contracts Exhibit 17 [R. 748] and Exhibit 91 [R. 762].

California Civil Code, Section 3251 states:

> "He who takes the benefit must bear the burden."

Having accepted the benefits of manufacturing for the Plaintiffs, and Defendants came under a duty not to use information imparted to them so as to injure the Plaintiffs in their business. Using such information to go into direct competition with the Plaintiffs is injury of the most direct type. This is the long and the short of the matter.

This principle is well stated in *Du Pont Powder Co. v. Masland,* 244 U. S. 100, 102, wherein Mr. Justice Holmes said:

> "* * * The word property as applied to trademarks and trade secrets is an unanalyzed expression of certain secondary consequences of the primary fact that the law makes some rudimentary requirements of good faith. Whether the plaintiffs have any

> valuable secret or not, the defendant knows the facts, whatever they are, through a special confidence that he accepted. The property may be denied but the confidence cannot be."

The record is clear that over the years the Plaintiffs did an extensive amount of development and test work on the patented product and that the results of this work were made known to the Defendants.

Commencing in 1944 Rohr conducted an extensive program on the patented devices. As exemplified by Exhibit 39 [R. 869], Gross testified that manufacturing data sheets were calculated, sample parts made up, tested, and changed as the tests indicated. [R. 234.] Concurrently, tests were conducted to determine leakage ratio under high pressure gas and liquid conditions [R. 223] using specialized equipment shown in Exhibit 49 [R. 876]. Other tests such as vibrations test were conducted to determine whether the fasteners would maintain their structural integrity when sealed [R. 225]. Equipment such as shown in Exhibit 57 [R. 880] was used. As a part of this work in 1944 Gross and Cornwall developed and tested the first one-piece seal wherein the rubber ring was bonded to the retaining washer as shown in Exhibit 36 [R. 866].

Rohr undertook the production of the patented sealing devices in quantity for its own critical needs. It made dies to produce the retaining washers, molds to produce the rubber doughnuts to the exact sizes required, and manufacturing equipment [R. 248]. Rohr produced and successfully used on the order of 100,000 of the patented sealing devices before the close of World War II [R. 243]. These figures conclusively demonstrate that the

personnel at Rohr had acquired the know how, and had done sufficient test and development work to produce a successful device.

In 1946 Gross personally delivered to the Defendant Kerley all of the equipment, dies, molds, packaging equipment and inventory which Rohr had [R. 247]. Dimensional data was included [R. 248]. Gross discussed with Kerley at this time [R. 248], and in his many subsequent conversations with Kerley [R. 256], every possible facet of the experience and knowledge that Rohr had acquired. Both Gross and Kerley agree that there were many meetings and discussions over the years [R. 256, 292] and as expressed by Kerley "There was quite a bit of cooperation between the companies." [R. 283]. This, on its face, spells out a relationship of mutual trust and confidence.

The work of Rohr did not end in 1946 but continued. This additional work was undertaken to determine the effect of usage and environmental conditions on the patented devices, and to insure that they would meet rigid government specifications. This meant conducting such tests as bolt loading with LOCK O SEALS installed [report physical Ex. 24], and installation tests on different types of fasteners [report physical Ex. 25]. Testing in comparison with other sealing devices [report physical Ex. 26], and in the presence of ozone as shown in the reports [physical Exs. 18 and 19]. Torque tests as shown in physical Exhibit 27, and engine mount tests as shown in report physical Exhibit 28. Cubic structure tests with multiple LOCK O SEAL installations as shown in report physical Exhibit 20, and many different tests on materials as shown in the groups of reports physical Exhibits 4 and 5. Additional data sheets of refined dimensions and

tolerances were prepared and Gross testified that this work was conducted under his supervision throughout the years [R. 271].

Not only did Rohr do this work as outlined above, but the Defendants knew of it either from Rohr or from Wolfe. Gross testified that he had many contacts with Kerley throughout the years [R. 256] and this is substantiated by Kerley [R. 292]. Kerley acknowledges that he knew of all of the "important tests" made by Rohr [R. 324]. Rubber Teck manufactured to the specifications and standards of Wolfe, and as these were changed or modified as a result of Rohr's work, Rubber Teck was informed. Rubber Teck was given these specifications in the form of Wolfe data sheets [Ex. 7; R. 847] from time to time as changes were made [R. 577].

The record also shows that the Plaintiffs had fully developed and were selling a one-piece seal well more than a year before the Defendants' first efforts. This evidence does something more—it show that the Defendants took advantage of Plaintiffs' improvements as well as Plaintiffs' patent rights—that the competitions was as direct as possible, and was not merely an effort on the part of the Defendants to enter the fastener sealing field with a product of their own design and development.

The concept of a one-piece seal originated in the Rohr Laboratories in 1944 [Ex. 36; R. 866] through the work of Gross and Cornwall. It was then recognized that a seal in which the rubber ring was secured to the retaining washer would have certain practical advantages. It would be easier to handle as an inventory item, and would simplify installation. However, such a one-piece seal appeared to be more expensive and difficult to manufacture.

In 1951 Wolfe working through its design engineers [R. 588] hit upon the idea that a one-piece seal might be made practical for volume production and sale if the rubber ring were molded in place within the retaining washer using the washer as part of the mold and injecting the rubber into it. Wolfe worked on this problem actively and by the Fall of 1951 had experimented with samples and made up detailed drawings showing such a one-piece seal [Ex. 110; R. 917]. In the Spring of 1952 detailed drawings of the parts and of the molds and dies for making these parts were made up to prepare for production. This development work is fully supported by the drawings introduced in evidence, Exhibits 60, 61, 62, 64, 65, 66, 67 and 68 [R. 883-891] and by the testimony of Smith [R. 589-598].

By the Summer of 1952 Wolfe was producing and selling one-piece LOCK O SEALS to the trade. Evidence of such sales taken from the books and records of the Wolfe Company were introduced in evidence in detail as Exhibits 101, 102, 103, 104 and 105 [R. 903-912]. A sales summary of seals sold to the trade under the designation Series 600, one-piece LOCK O SEALS were prepared by the head of Wolfe's accounting department [R. 608] and introduced as Exhibit 106 [R. 913]. In 1953 Wolfe decided to market the one-piece seals under a separate trademark and adopted and commenced using the trademark STAT O SEAL for the one-piece seals. A summary of sales under the mark STAT O SEAL is contained in Exhibit 78. Sales literature under the designation Series 600, one-piece LOCK O SEALS is seen in Exhibit 15A [R. 852] and similar later literature under the mark STAT O SEAL is Exhibit 22 [R. 853]. This evidence conclusively established the fact that Wolfe commenced production and

sales of one-piece seals in the Summer of 1952 and continued without interruption thereafter.

The Defendants on the other hand, first offered DUO SEALS to Fletcher Aviation Company in November of 1953, Exhibit 11 [R. 744] and according to their own testimony did not actually sell any until well into 1954 [R. 300]. It thus seems clear that the Defendants were late comers to the one-piece seal by a period of two years.

Prior to entering the field of *one-piece* seals the Defendants also had the benefit of Wolfe's work. In the Fall of 1952, Smith the general manager of Wolfe disclosed the entire program to Kerley and Grass to enable Rubber Teck to undertake subcontracting the rubber work on the one-piece seal [R. 614]. At this time the Defendants learned the details of Wolfe's development work, and were given drawings of the parts and the molds and dies for making them, such as Exhibits 60-68 [R. 883-891]. The methods and techniques that Wolfe had developed to manufacture the seals were discussed in detail [R. 615-619].

At the trial the Defendants contended by their own oral testimony that they had originated the one-piece seal, and attempted to support this position with the testimony of Robert Elam a former employee of Wolfe who was subsequently active in selling the Defendants products [R. 490].

The trial court did not resolve this conflict of testimony but apparently proceeded on the basis that the manufacturing and molding techniques used in making a one-piece seal were immaterial. During the trial Smith, the general manager of the plaintiff Wolfe, testified at length

as to the work done on development of the one-piece seal and his conversation with the Defendants about it [R. 585-602; 613-622]. Subsequently during the cross-examination of Smith the Court said [R. 632]:

> "The Court: The only testimony is that he says he gave certain molds or gave drawings for certain molds to the defendants. That is as far as I am concerned with them. I don't care what kind of molds they were. He says there were five different kinds. I don't care how they operated. The only question I am interested in here is whether or not the defendants' device is a copy of the plaintiffs' device, whether it uses the same principle."

Later the Court asked the witness Smith about trade secrets [R. 638]:

> "The Court: I am talking about the seal itself now. In the two seals that are manufactured, one manufactured by the defendants and one manufactured by the plaintiffs, what trade secrets do you say that the defendants in the manufacture of their seal took from the plaintiff?
>
> "The Witness: Trade Secret? I am afraid I can't answer, because I don't know actually *what a trade secret is in the law.*
>
> "The Court: If you can't answer, that is all that is necessary."

The Court's conclusion on the question of Unfair Competition is set forth in Findings No. 18, 19 and 20 [R. 42].

We submit that said findings are against the weight of the evidence and fail to consider the true nature of a

"trade secret". As is said in the Restatement of Torts, Sec. 757, (b) Definition of trade secret.

> "A trade secret may consist of any formula, pattern, device *or compilation of information* which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it."

The information which the Defendants learned from plaintiffs concerning the LOCK O SEAL and STAT O SEAL devices was proprietary information of great value. It is therefore clearly within the definition of a trade secret as above set forth.

There remains the question of whether the Defendants used any of the information which they had learned from the plaintiffs in manufacturing the DUO SEAL device. They say that they did not, but they submitted no drawings, test data or anything else, to support the proposition that they worked independently in developing the DUO SEAL.

The Defendants contend that they independently desiged and developed the DUO SEAL establishing their own dimensional data as they went. Exhibit 77, the Defendant's sales literature on DUO SEALS [R. 893] shows the dimensions and tolerances of the parts of the DUO SEALS for the many different sizes which they currently produce. *For 26 different sizes of the Defendants' product* the dimensions and tolerances published in Exhibit 77 are identical with those of Plaintiffs as shown on Exhibit 1 [R. 827] to the nearest .001 of an inch. Since the Defendants' literature shows in tabular form five different dimensions for any particular size of DUO SEAL we have a total of 130 dimensions which defendants claim they determined by independent design work. It is incredible

that the Defendants could have started afresh with design and test work and arrived at the same figures as shown on Exhibit 1 one hundred and thirty different times. The short answer is that the Defendants did not do so, what they did was to start with the Plaintiffs' dimensions and build the DUO SEALS to these specifications. This is direct copying and unfair trade practice of the most flagrant type which, we submit under the circumstances was unfair competition. (See Cal. Civ. Code, Sec. 3369):

> "3. (*Definitions*) As used in this section unfair competition shall mean and include unfair or fraudulent business practice and unfair, untrue or misleading advertising . . ."

VII.

The Defendants' Choice of a Trademark.

One of the fundamental purposes of the law of unfair competition is the protection of goodwill. This basic concept of protecting the goodwill of a business against those who attempt to trade on the goodwill by marketing products under a confusingly similar name has been carried into the trademark statutes as follows (15 U. S. C. 1114(1)):

> "Any person who shall in commerce (a) use without the consent of the registrant, any reproduction, counterfeit, copy, or *colorable imitation* of any registered mark in connection with the sale, offering for sale, or advertising of any goods or services, on or in connection with which such use is *likely to cause confusion or mistake or to deceive purchasers* as to the source of origin of such goods or services . . . shall be liable to a civil action. . . ."

The decided cases recognize that likelihood of confusion may be caused by reason of similarity of the marks in sound, appearance or significance. The cases also recognize that it is the over-all effect of the concurrent use of the marks on goods of the same class sold in the same channels of trade.

The courts have long held that it is not necessary to appropriate every word or portion of a trademark to constitute infringement. In the leading case of *Saxlehner v. Eisner & Mendelson Co.,* 179 U. S. 19 (1900) the Supreme Court said at page 33:

> "It is not necessary to constitute an infringement that every word of a trade-mark should be appropriated. It is sufficient that enough be taken to deceive the public in the purchase of a protected article."

This Court held in *Brooks v. Great A. & P. Tea Co.,* 92 F. 2d 794 that "8 Bells" for coffee was an infringement of Plaintiff's trademark "8 O'Clock" for the same goods.

As Judge Learned Hand said in the case of *Stamford v. Thatcher,* 200 Fed. 324, in holding that "Messmate" infringed "Shipmate" for ship stoves:

> "Of course, the imitation is not exact; it never is in such cases. The details of the stove have been varied in trifling regards, and the maker's name has been put on the hearth. All that is almost a convention, when you appropriate another man's mark; for there must be some color of good faith, some defense to put forward. Minor differences are supposed to help over hard places."

Defendants as a result of their close relationship with Plaintiffs over a long period of years were fully familiar

with the family of marks which Plaintiffs had developed for their various products. Also that the creation of this family of marks was the result of a definite plan of Plaintiffs to create a series of related marks with a common suffix, thereby creating an awareness in the trade that such related marks signified Plaintiffs as the source of origin. As the record shows [R. 962-968], Plaintiffs have adopted, used, and registered in the Patent Office the following trademarks, all having the same suffix:

LOCK O SEAL
STAT O SEAL
RIV O SEAL
TERMIN O SEAL
BOLT O SEAL
VALV O SEAL
GASK O SEAL

Of the foregoing marks, Plaintiffs had, as Defendants well know, used the trademarks LOCK O SEAL and STAT O SEAL for fastener seals coming under the patent in suit.

Defendants also knew that these trademarks LOCK O SEAL and STAT O SEAL were well and favorably known throughout the entire aircraft industry, and particularly to the scores of Plaintiffs' customers of whom Defendants had intimate knowledge.

Knowing all these things, the Defendants nevertheless, when they decided to enter the market with a competing seal deliberately chose for their infringing products the name DUO SEAL—obviously getting just as close to Plaintiffs' family of marks as possible. Defendants' story of an alleged contest or survey among the employees [R. 505] in the selection of the DUO SEAL mark is a shopworn subterfuge used by persons who employ such tactics.

In the case of *Q-Tips, Inc. v. Johnson & Johnson,* in the Third Circuit, 206 F. 2d 144, 98 U. S. P. Q. 86, the Court held that "Cotton Tips" was an infringement of "Q-Tips." Judge Goodrich in a full and well reasoned decision said:

> "One of the elements to be considered in deciding whether there is confusing similarity is the intent of the actor who adopts the designation.
>
> ". . . The evidence is convincing that Defendant made its choice of 'Cotton Tips' in order to come as close as it thought legally possible to 'Q-Tips' and bask in the reflected popularity of plaintiff's name."

If we consider the marks LOCK O SEAL, DUO SEAL and STAT O SEAL together for a moment, and then the marks BOLT O SEAL, RIV O SEAL, GASK O SEAL and TERMIN O SEAL, it is impossible to mistake the Defendants' purpose.

By reference to Exhibits 79 and 80 [R. 898, 899] the Court will see a clear instance of actual confusion. These exhibits are both purchase orders from Beech Aircraft Co. addressed to Franklin C. Folfe Co. In each case the part number 600-001 is that of Franklin C. Wolfe Co. and in Exhibit 80 the Wolfe Trademark STAT O SEAL is called out. But in Exhibit 79, on the same line with Plaintiffs' part number 600-001 is the *Defendants' trademark* DUO SEAL. This evidence is embodied in Finding No. 24 [R. 43] which at the same time points out that it was one of a multitude of sales.

Since no evidence of actual confusion is necessary under the settled law, evidence such as the foregoing should be conclusive in a case of this character. Indeed it can be seen that since the goods are sold for the same use in the same sizes to the same purchasers, there is every possibility of confusion. The only thing that could save such

identical goods from confusion would be the good faith efforts of the competitors to identify them by different names. No such good faith was shown by the Defendants here.

At the trial the Defendants introduced into evidence a number of trademark registrations showing that others had used the o SEAL suffix in various combinations [R. 969-995]. However, there is no evidence in the record as to the channels of trade, customers, or use or purpose of the goods sold under these latter marks. Without taking into consideration all of these factors, there is little or no significance to such registrations of others.

Assuming that scores of other manufacturers have the right to use similar suffixes on their many different products, it does not negate the likelihood of confusion between Plaintiffs' and Defendants' goods when sold to the same customers, through the same channels of trade, and for identical usage.

The trial court's findings that there is no likelihood of confusion are against the clear weight of the evidence and should be reversed.

Conclusion.

The record in this case shows conclusively that:

1. The fastener seal of the patent in suit is a new combination of elements producing a new and improved result not shown or taught by the prior art and meets all of the tests of invention laid down by the statute and the Courts. The judgment of invalidity of the patent should be reversed.

2. The fastener seal of the Defendants embodies each and every element of Claim 1 of the patent in suit, in-

cluding the "doughnut shaped ring" and is a clear infringement thereof. The judgment of non-infringement should be reversed.

3. The conduct of the Defendants in deliberately adopting the trademark DUO SEAL which is confusingly similar to Plaintiffs' family of O-SEAL trademarks, and in using the data and other information obtained by Defendants while in privity with Plaintiffs, as a springboard to launch and carry on a competing business is clearly an unfair trade practice and amounts to unfair competition. The judgment dismissing this count of Plaintiffs' complaint should be reversed.

4. The case should be remanded to the trial court on each of the issues 1-3 above with instructions to enter judgment for Plaintiffs as prayed, for an injunction and the assessment of damages.

Respectfully submitted,

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